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09/716,885	11/20/2000	Rumo Satake	SEL 229	1074

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EXAMINER
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LEWIS, DAVID LEE

ART UNIT	PAPER NUMBER
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2673

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/716,885

**Applicant(s)**

SATAKE, RUMO

**Examiner**

David L Lewis

**Art Unit**

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 September 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 9.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 U.S.C. § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1-5, 17-18, and 26-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Hartmann (4976515).**
3. **As in claim 1, Hartmann teaches** of a method of driving a liquid crystal display device, figure 3a, said liquid crystal display device including: an orientation film over a substrate, **figure 1 item 6**; and a liquid crystal material over orientation film, **figure 1 item 2**, said liquid crystal material having a chiral smectic phase, **column 3 lines 20-25**, and being continuously switched according to an electric field applied thereto, **figure 3a**, said method comprising the steps of: displaying a black level by the liquid crystal material in a first period, **figure 3a item Vbl, figure 4b wherein  $-6V < Vbl < 0V$** ; applying a voltage to the liquid crystal material for a gradation display in a second period, **figure 3a item V1 or V2**.
4. **As in claim 2, Hartmann teaches** of a method of driving a liquid crystal display device, said liquid crystal display device including: an orientation film over a substrate, **figure 1**

**item 6**; and a liquid crystal material over the orientation film, **figure 1 item 2**, said liquid crystal material having a chiral smectic phase, **column 3 lines 20-25**, and being continuously switched according to an electric field applied thereto, **figure 3a**, said method comprising the steps of: canceling out a spontaneous polarization of the liquid crystal material in a first period, **figure 3a item Vbl, figure 4b wherein  $-6V < Vbl < 0V$** ; and applying a voltage to the liquid crystal material for a gradation display in a second period, wherein the second period comes before or after the first period, **figure 3a item V1 or V2**.

5. **As in claim 3, Hartmann teaches** of a method of driving a liquid crystal display device: said liquid crystal display device including: an orientation film over a substrate, **figure 1 item 6**; and a liquid crystal material over the orientation film, **figure 1 item 2**, said liquid crystal material having a chiral smectic phase, **column 3 lines 20-25**, and being continuously switched according to an electric field applied thereto, **figure 3a**, said method comprising the steps of: applying a voltage of 0V to the liquid crystal material, **figure 3a item Vbl, figure 4b wherein  $-6V < Vbl < 0V$** ; and applying a voltage to the liquid crystal material for a gradation display in a second period, wherein the second period comes before or after the first period, **figure 3a item V1 or V2**.

6. **As in claim 12, Hartmann teaches** of a method of driving a liquid crystal display device, **figure 1 and 7**, said liquid crystal display device including: a plurality of thin film transistors being provided over a substrate, **figure 7 item 15**; an auxiliary capacitor

being connected in series to each of the plurality of thin film transistors, **figure 7 item 25**; an orientation film over each of the plurality of thin film transistors, **figure 1 item 6**; and a liquid crystal material over the orientation film, **figure 1 item 2**, said liquid crystal material having a spontaneous polarization and being continuously switched according to an electric field applied thereto, **column 3 lines 20-25**, said method comprising the steps of: applying a voltage of 0V to the liquid crystal material in a first period, **figure 3a item Vbl**, **figure 4b wherein  $-6V < Vbl < 0V$** ; and performing a gradation display in a second period, wherein the second period comes before or after the first period, wherein the first period and the second period repeat, **figure 3a item V1 or V2**.

7. **As in claims 4, 17, and 26, Hartmann teaches** of, wherein a plurality of active elements are formed over the substrate, **figure 2a item 15**. **As in claims 5, 18, and 27, Hartmann teaches** of, wherein each of the plurality of active elements applies a voltage to the liquid crystal material, and wherein the voltage has an upper limit, **figure 3a item Vd**. **As in claim 15, Hartmann teaches** of, wherein the liquid crystal material has a chiral smectic CF phase, **column 3 lines 20-25, figure 1 item 2**. **As in claims 35-37, Hartmann teaches** of said liquid crystal material being driven by active matrix driving, **figure 2a and 7**. **As in claim 38, Hartmann teaches** of wherein said black level is displayed by applying a voltage of 0V to the liquid crystal material, **figure 3a item Vbl, figure 4b wherein  $-6V < Vbl < 0V$** . **As in claim 39-41, Hartmann teaches** wherein a quantity of light changes by changing a values of a voltage, **figure 4b**. **As in claim 13, Hartmann teaches** of, wherein a transmittance of the liquid crystal material is uniquely determined when

voltages having a same absolute value and opposite polarities are applied thereto, figure 4a, wherein  $V_d$  is 6v and  $V_{bl}$  is -6V.

***Claim Rejections - 35 U.S.C. § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 7-9, 11, 14, 16, 20-22, 24, 25, 29-31, 33, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartmann (4976515) in view of Saishu et al. (6069600).**
10. **As in claims 7-9, 16, 20-22, 25, 29-31, and 34, Hartmann teaches of the invention as applied to claim 1, however Hartmann is silent as to said combination of varying spontaneous polarization of the liquid crystal material being of a specific value and orientation film thickness. Saishu et al. addresses varying spontaneous polarization of the liquid crystal material, column 9 lines 15-25; column 12 lines 55-60, further wherein said varying orientation film thickness would have been an obvious design choice in view of the range of values suggested by Saishu, further wherein said thickness values also represent obvious design choice thickness values available to the skilled artisan. As in claims 11, 24, and 33,**

Saishu et al. teaches of the auxiliary capacitor will known in the art that Hartmann is silent on.

**Therefore it would have been obvious** to the skilled artisan at the time of the invention to adapt said varying polarization and thickness values as suggested by Saishu in the device as suggested by Yang because both Yang and Saishu teaches of a drive technique for a passive and active matrix type liquid crystal display, as found in the above claims. **As in claim 14, Saishu et al. teaches** of, wherein the liquid crystal material has a same tilt angle when voltages having a same absolute value and opposite polarities are applied thereto, figure 4a, column 1 lines 38-42, Hartmann also suggests an angle advantage, column 1 lines 38-43.

11. **Claims 6, 19, and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartmann (4976515).**
12. **As in claims 6, 19, and 28, Hartmann teaches** of, wherein the upper limit of the voltage has an absolute value of 7 V or less, figure 4a item  $V_d=6v$ , wherein 6v is sufficiently close to 7v and would have been an obvious design choice.
13. **Claims 10, 23, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartmann (4976515) in view of Verhulst (6069604).**
14. **As in claims 10, 23, and 32, Hartmann is silent** as to voltages having an opposite polarity and same value. **Verhulst teaches** the display as taught by Hartman can vary the signal applied to  $V_{com}$ , **figure 8b**, wherein the result is having voltages of an opposite polarity and

same value as claimed is produced. **As in claims 10, 23, and 32, Hartmann in view of Verhulst teaches** of, wherein a first response time is defined as a response time of the liquid crystal material between a first voltage and a second voltage having an opposite polarity to the first voltage not via a voltage of OV, figure 3a item Vb1 and V2, wherein a second response time is defined as a response time of the liquid crystal material between a first voltage and a second voltage having an opposite polarity to the first voltage via the voltage of OV', wherein the second response time is five times or more as short as the first response time, figure 3a item V2 and Vbl., wherein the inclusion of a varying Vcom would further produce blanking and data pulses of opposite polarity, via and not via OV's, as claimed.

***Response to Arguments***

15. Applicant's arguments filed 9/4/2003 are moot in view of the new grounds for rejection. **Hartmann anticipates the applicants invention.**

***Conclusion***

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David L. Lewis** whose telephone number is **(703) 306-3026**. The examiner can normally be reached on MT and THF from 8 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on (703) 305-4938. Any inquiry of a general nature or relating to the status of this



application or proceeding should be directed to the Group receptionist whose telephone number is (703) 305-3900.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231


**or faxed to:**

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

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